Wajon A, Ada L, et al. Surgery for thumb (trapeziometacarpal joint) osteoarthritis. Cochrane Database of Systematic Reviews 2005, Issue 4. Art No:CD004631.

Design: Meta-analysis of Clinical Trials

Databases/selection and rating of articles:

- 7 clinical trials (384 participants) comparing surgical procedures for trapeziometacarpal joint osteoarthritis, with pain, physical function, range of motion, strength, or patient global assessment as outcomes
- Databases searched included Cochrane, MEDLINE, CINAHL, AMED, EMBASE; conference proceedings including International Federation Society of Hand Surgeons, American Society Surgery Hand, American Society Hand Therapists, Australian Hand Surgery Society
- Studies were eligible for inclusion if they were randomized, quasi-randomized, or controlled, with all patients receiving a surgical intervention
- PEDro scale was used for quality rating by 2 independent authors; no exclusions were based on the PEDro score

Main outcome measures:

- Comparisons involved 5 operative procedures: trapeziectomy, trapeziectomy with interpositional arthroplasty, trapeziectomy with ligament reconstruction, trapeziectomy with ligament reconstruction and tendon interposition (LRTI), and joint replacement
- For pain relief, trapeziectomy was not different from either trapeziectomy with interpositional arthroplasty or with LRTI
- For physical function, trapeziectomy was similarly not different from the two other procedures
- For range of palmar abduction, trapeziectomy with LRTI was more effective than trapeziectomy alone (4.6 cm vs. 4.3 cm)
- Pinch strength was equal for trapeziectomy alone and for two operations with trapeziectomy with an additional stabilization procedure
- Adverse effects (e.g., recurrent pain, instability, sensory loss, neuroma) were reported less often with trapeziectomy alone than for trapeziectomy with an additional stabilization procedure

Authors' conclusions:

- There is insufficient evidence to conclude that any one procedure confers greater benefits in pain relief, physical function, global assessment, or range of motion than any other
- There is sufficient evidence to conclude that no one procedure produces greater benefits in strength than any other
- There is sufficient evidence to conclude that trapeziectomy alone is accompanied by fewer complications than trapeziectomy combined with ligament reconstruction and tendon interposition

- There is sufficient evidence to conclude that trapeziectomy alone is accompanied by fewer complications than trapeziectomy combined with interpositional arthroplasty
- Unless there are strong indications to do otherwise, trapeziectomy alone should be preferred to procedures that combine it with other procedures

Comments:

- Some comparisons (trapeziectomy with ligament reconstruction vs. trapeziectomy with LRTI) could not be pooled because only one study was available
- Some comparisons (adverse effects of trapeziectomy compared to more complex procedures) combine adverse events from very different stabilization procedures (e.g., collagen implants and LRTI)
- Not all references used for meta-analysis are completely clear; “Davis 2004 (b)” lists 5 articles, one of which is identical to Davis 2004 (a), and none of the others were published in 2004; similarly, “De Smet 2004” lists 3 articles, one of which was published in 2002
- Certain outcomes which happen to use similar scales (0-100) are combined, even though the combination is not intuitively clear; e.g., physical function on a VAS is combined with function measured on a DASH, which covers a more explicit set of hand function measures
- Nevertheless, there is consistency of reporting of adverse outcomes and of pain/function benefits, making the basic conclusion adequately supported

Assessment:

- Adequate to support a statement that there is no evidence of additional benefits of stabilization procedures in addition to simple trapeziectomy
- Adequate to support a statement that there is good evidence that adverse effects occur with greater frequency in LRTI than in simple trapeziectomy